IN THE CLAIMS

1. (currently amended) A method for equalizing the pressures in a melting ~~the melting~~ chamber and in the cooling water system for an ingot mold/induction coil circuit of a special melting unit, ~~for example a pressure electroslag remelting (PESR) unit having a copper ingot mold, or a pressure induction furnace having an induction coil and a cooling water system,~~ comprising:

comparing a ~~in which the~~ pressure of ~~the~~ cooling water ~~for the ingot mold/induction coil circuit~~ to a ~~is compared to the~~ pressure of ~~the~~ process gas in a ~~in the~~ melting chamber of the unit, wherein a ~~characterized in that the~~ pressure difference is maintained in a range from 0 to ~~+/- 0.5~~ +/- 0.5 bar;

feeding a process ~~bar, whereby the~~ gas from the melting chamber of the unit ~~is~~ first into ~~led to~~ an intermediate vessel containing hydraulic liquid, and only then supplying said ~~is the~~ hydraulic liquid ~~supplied~~ to one of ~~the~~ two chambers of a piston-type accumulator, whereby, corresponding to a pressure drop or pressure rise in one of the process gas or cooling water ~~two media~~, counteraction is provided by adjusting at least one of the pressure of the process ~~discharging excess~~ gas or the flow of ~~by additional repumping of~~ cooling water, ~~or vice versa,~~ and determining the direction of the countereffect for a pressure drop or pressure rise ~~is determined~~ by the magnitude and rate of one of a ~~the~~ pressure drops or a pressure ~~drop/pressure~~ rise to equalize the pressures in the melting chamber and in the cooling system.

2. (currently amended) A device for equalizing the pressures in the melting chamber and in the cooling water system of a special melting unit comprising: ~~unit, for example a pressure electroslag remelting (PESR) unit having a copper ingot mold, or a pressure induction furnace having an induction coil and a cooling water system, in which~~

a cooling water circuit;

a piston-type accumulator which is subdivided by a piston into a first and a second ~~two~~ variable-volume chamber in said ~~chambers is provided in the~~ cooling water circuit for an ~~the copper~~ ingot mold/induction coil, wherein the first ~~the one~~ chamber of said ~~the~~ piston-type accumulator is connected ~~being connected~~ via a pipe and control fittings to ~~the~~ said cooling water circuit for the ingot mold/induction coil, to ~~coil, and~~ a heat exchanger; ~~exchanger,~~ one or more circulating pumps; ~~pumps, and~~ an additional high pressure water refill pump ~~being~~ correspondingly provided in ~~the~~ said cooling water circuit, wherein said second ~~characterized in that the other~~ chamber of the piston-type accumulator is connected via an additional pipe and a control fitting ~~and control fittings~~ to an intermediate vessel which is partially filled with a hydraulic liquid, wherein said ~~the~~ intermediate vessel is ~~being~~ connected via an additional hydraulic line having ~~with~~ control and shutoff fittings to the melting chamber, and at least one ~~chamber of the PESR unit or of the pressure induction furnace, and one or more~~ pressure sensor ~~sensors being~~ respectively mounted in each of said pipes ~~the above referenced pipes,~~ whereby, corresponding to the design pressure of the unit, the piston-type accumulator is ~~accumulator may be designed as~~ a hydraulic cylinder with a continuous piston rod or ~~as~~ a pneumatic cylinder with a magnetic piston, and the high pressure water refill pump is ~~pump may be designed as~~ a metering pump.

3. (previously presented)The device according to Claim 2, wherein the pipe between the vessel and the furnace hood above the liquid-filled chamber of the vessel leads into this vessel, and the piston-type accumulator is situated in a plane below the plane of the vessel.

4. (previously presented)A device according to Claim 2, wherein the piston rod of the piston-type accumulator extends through both end walls of the piston-type accumulator, and

cooperates with position switches by which the valves in the pipes which are connected to the vessel can be actuated.

5. (previously presented)A device according to Claim 2, wherein the piston rod of the piston-type accumulator extends through both end walls of the piston-type accumulator, and cooperates with position switches by which the valves in the pipes which are connected to the vessel can be actuated.